

In the Specification

Please delete paragraph 5 and replace it with the following paragraph:

[Para 5] Conventionally, ~~Sn—Pb~~Sn-Pb type solder interconnections, having low tensile modulus, are used to join electronic components, such as substrates to electronic PCBs or cards. However, since these ~~Sn—Pb~~Sn-Pb type solder interconnections contain poisonous Pb, there has been an increasing number of cases in which the use thereof is restricted. To address these problems, trends have been leaning towards the use of interconnections composed of Pb-free solders for joining substrates to electronic PCBs. Several Pb-free solders have been identified for replacing Pb-containing solder interconnections in microelectronic applications, some of which include Sn-3.5Ag (SA), Sn-3.5Ag-7Cu (SAC), Sn-3.5Ag-4.88i (SAB), and Sn-0.7Cu (SC) (with slight variations in compositions).

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Please delete paragraph 6 and replace it with the following paragraph:

Para 6] As the interconnect industry diverges away from the use of ~~Sn—Pb~~Sn-Pb type solder interconnections, and towards Pb-free interconnections, there remains a period during which the use of a ~~Sn—Pb~~Sn-Pb type solder paste (or flux) will still be required for joining the Pb-free interconnections to the electronic PCBs due to the materials thereof. However, attempts at attaining a sufficient and acceptable level of thermo-mechanical fatigue reliability for these hybrid or mixed assemblies has not generally been successful.

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Please delete paragraph 7 and replace it with the following paragraph:

[Para 7] Accordingly, during this interim period, there exists a need in the art for providing improved methods for connecting Pb-free interconnections to electronic PCBs using a Sn—~~Pb~~Sn-Pb type solder paste (or flux) for forming a soldered article having superior reliability in the mixed (hybrid) assembly.

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Please delete paragraph 9 and replace it with the following paragraph:

[Para 9] It is another object of the present invention to provide a soldered article having superior reliability at a soldered mixture of a Pb-free ~~interconnections~~interconnection and a Pb-containing solder.

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Please delete paragraph 15 and replace it with the following paragraph:

[Para 15] In forming the homogenous hybrid interconnect structure of the invention, the aligned lead free solder joint and lead-containing solder ~~maybe~~may be heated to temperatures ranging from above 217°C to about 260°C, and times ranging from about 2 minutes to about 4 minutes. The homogenous hybrid interconnect structure may have a configuration characterized by having no distinct regions of the lead free solder joint and the lead-containing solder.

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Please delete paragraph 31 and replace it with the following paragraph:

[Para 31] In achieving the oblate ellipsoid hybrid interconnect structures of the invention, it has advantageously been found that by heating the Pb-free solder interconnect and the

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Sn-Pb solder to temperatures just above the melting point of the Pb-free solder interconnect for sufficiently long dwell times, i.e., to at least or above 220°C to about 240°C for ~~above~~ about 1 minute to about 4 minutes, preferably from about 2-4 minutes, both the Pb-free solder ball and the Pb-containing solder residing on the board are allowed to completely ~~melting~~ melt during assembly. As is shown in Fig. 3, these molten materials mix together such that the Pb from the Pb-containing solder disperses throughout substantially the entire Pb-free solder interconnect for complete homogenization of the molten materials to ~~from~~ form the uniform hybrid interconnect structures 60 of the invention. For example, wherein the Pb-free solder interconnect joint is a 1 mm pitch SAC CBGA, with a density close to that of pure Sn, and the Pb-containing solder is a 60Sn-40Pb solder, the Pb from the 60Sn-40Pb solder disperses throughout the structure to result in a homogenous hybrid interconnect structure of the invention having about 6% by weight Pb.

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